



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,238	10/17/2001	Dale K. Bell	60,130-1197/01MRA0362	5578

26096 7590 01/25/2005

CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

EXAMINER


SMITH, JULIE KNECHT

ART UNIT PAPER NUMBER

3682

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

 Office Action Summary	Application No. 09/981,238	Applicant(s) BELL, DALE K.	
	Examiner Julie K Smith	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10, 11 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 11 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 10-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glaze et al. (4,754,847) in view of Miller et al. (5,492,419). Glaze et al. discloses a drive axle assembly (see fig. 2) comprising an axle housing (68), coaxial axle shafts (104, 106) supported at least partially within said axle housing, a driven shaft (58) having a yoke (38) at one end and supported at least partially within said housing transverse to said axle shafts, a gear assembly (60, 78) disposed within said housing coupling said axle and driven shafts, and a bearing assembly (72, 74) supporting said driven shaft in said housing. Glaze et al. further discloses a differential coupling said axle and driven shafts to permit relative motion between said axle shafts.

Glaze et al. does not disclose the seal arrangement as claimed by the applicant. However, Miller et al. teaches a bearing arrangement (see fig. 1) for a pinion, a through shaft or an input shaft (see col. 1, lines 5-12) for sealing the bearing lubricant from the axle lubricant comprising a cup affixed to a cage and a cone affixed to a shaft with rolling elements held in place by a retainer arranged between said cup and cone, a first seal (52) interposed between said cone and a pinion bearing cage adjacent to said yoke (24) and a

Art Unit: 3682

second seal (50) interposed between said cone and said bearing cage adjacent said pinion, said seals separating said housing into first and second cavities (76, outside of 76) with said bearing assembly and said gear assembly respectively disposed therein, a first lubricant in said first cavity lubricating said bearing assembly and a second lubricant different than said first lubricant in said second cavity lubricating said gear assembly (see col. 3, lines 10-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the seal arrangement of Glaze et al. with the teachings of Miller et al. so as to provide a bearing sealed on both ends so as to divide the assembly into two chambers, each having a different lubricant, and prevent the lubricants from entering the adjacent chambers.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glaze et al. in view of Miller et al. as applied to claims 1-7, 10-11 and 14 above, and further in view of Tersigni et al. (5,763,372). The reference combination set forth above discloses an axle assembly having a lubricant containing additives, but is silent as to the additive used in the axle assembly. However, Tersigni et al. teaches a GL-5 gear lubricant additive used in transmission applications (see col. 14, lines 59-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the lubricant of the reference combination set forth above with the lubricant as taught by Tersigni et al. so as to increase efficiency, reduce friction and reduce corrosion of the axle assembly.

Response to Arguments

4. Applicant's arguments filed 11/02/04 have been fully considered but they are not persuasive.

Regarding claims 1-7, 10, 11 and 14, applicant argues that there is no teaching in the Glaze or Miller reference to combine the two references. Glaze discloses all the structure of a drive axle assembly, as claimed, but lacks the bearing/seal arrangement. Glaze teaches a bearing, for use in a drive axle assembly, with the claimed seal arrangement separating the bearing chamber so that the lubricant from the axle assembly does not mix with the bearing lubricant, which is of different composition than the axle lubricant, which contains additives (see col. 1, lines 13-28).

Regarding the applicant's arguments with respect to claims 3-5, the applicant's arguments regarding those claims in view of the Butkovich reference were rendered moot since the rejection no longer includes the Butkovich reference. Applicant has never argued the use of the Miller reference with respect to claims 3-5.

Regarding claim 8, applicant argues that there is no benefit to the use of the GL-5 additive and that the applicant's specification actually teaches away from the use of this additive. The applicant's specification, along with the Miller reference, teach that the additive is not suitable to use in a bearing environment. The additive disclosed in Miller is used only in the axle housing and has a bearing arrangement which is sealed off, specifically to keep that additive out of the bearing housing. The applicant is correct in stating that there is motivation to avoid the GL-5 additive, but fails to mention that the additive is only avoided in the bearing housing and is commonly used in axle housings, as taught by Miller.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie K Smith whose telephone number is 703-305-3948. The examiner can normally be reached on Monday-Friday, 8-5:30, (Every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on 703-308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3682

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIS
Jks

January 12, 2005

William C. Joyce 1/23/05
WILLIAM C. JOYCE
PRIMARY EXAMINER